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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/647,081	11/13/2000	Timo Rantainen	PM-273843	4065

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EXAMINER
MEHRA, INDER P

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/647,081	RANTALAINEN ET AL.
	Examiner	Art Unit
	Inder P Mehra	2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 November 2000.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 15-28 is/are allowed.

6) Claim(s) 1-14 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 23 November 2000 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date .

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

1. This is in response to application dated: 11/13/2000.

Specifications

2. The disclosure is objected to because of the following informalities:
 - i. Refer to page 6 line 8. The limitation, "because this allows speech to be **transmitted between the transcoder 122 and the base station controller 102** in cellular radio form" is confusing. **Transcoder 122 is part of the base station controller 102**. These are not distinct from each other. How can transcoder 122 transmit speech to Base station in which it is included.

Appropriate correction is required.

- ii. Refer to page 8 line 27. The limitation, "As the figure shows, every other synchronous burst SB would extend to two normal bursts NB, which is not desirable" is not comprehensive from any figure. Adequate explanation and figure number be mentioned.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention
4. Claim 1, 4, 7-8, 10-12 14-15, 18, 20-22, 25 and 28 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Following claims recite limitations which lack sufficient antecedent basis:

Claim 1 recites the following limitations

"the length" in claim 1 line 6, ;

"the place" in claim 1 line 8;

"the part the burst" in claim 4 line 2;

"the location coordinates" in claim 7 line 2;

"the radio transmitter" in claim 7 line 3;

"the offset" in claim 7 line 4;

"the time difference" in claim 7 line 4;

"the transmission moment" in claim 7 line 4;

"the ideal synchronized radio burst" in claim 7 line 5;

"the actual synchronous radio burst" in claim 7 line 5;

"the radio burst" in claim 8 line 2;

"the physical channel" in claim 10 line 2;

"the physical channel" in claim 11 line 2;

"the OTD" in claim 12 line 2;

"the capacity" in claim 14 line 3;

"the coordination" in claim 15 line 8;

"the transmission" in claim 15 lines 8 and 16;

"the length" in claims 15 line 14 and claim 17 line 3;

"the part of the burst" in claim 18 line 3;

"the bit pattern" in claim 20 line 2;

“the location coordinates” in claim 21 line 3; “the radio transmitter” in claim 21 line 4; the offset” in claim 21 line 4; “the time difference” in claim 21 line 5; “the transmission moments” in claim 21 line 5; “the ideal synchronized radio burst” in claim 21 line 5; and “the actual synchronous radio burst” in claim 21 line 6;

“ the radio burst” in claim 22 line 2;

“the channels” in claim 25 line 3;

“the capacity of normal channel” in claim 28 line 3.

Appropriate clarification/correction is required.

b. Claims 2-14 recite, “a method” in line 1. Change “a” to “the”, because “the method” is disclosed in line 1 of claim 1.

Appropriate clarification/correction is required.

c. Claims 16-28 recite “a radio” in line 1. Change “a” to “the”, because the limitation, “The radio” is disclosed in line 1 in all these claims.

Appropriate clarification/correction is required.

5. Regarding claims 7, 11-12, 21 and 25, the phrases "such as", in line 2 and "i.e" in line 4 render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

6. Claim 15 recite, "a channel CODEC (216) for forming *a normal channel*" in line 15, whereas in line 24 of this claim 15, the limitation, " the channel CODEC (216) is arranged to form *a synchronized channel*". Please reconcile the discrepancy in limitations. Appropriate correction is required.

7. Following claims recite limitations, which are preceded by antecedent basis. "a" in front of them should be changed to "the":

- "a synchronized radio burst" in claim 13 line 2;
- "a synchronized radio burst" in claim 15 line 16;
- "a normal radio burst" in claim 16 line 4;
- "a normal radio burst" in claim 17 line 3.

Appropriate correction/clarification is required.

Drawings

8. a. Claim 1 recite limitations, "synchronized channels---two radio transmitters, where normal radio bursts are transmitted -----asynchronously-----obtaining synchronized timing-----" These limitations are not illustrated in the drawings.

Appropriate clarification/ correction is required.

b. Claim 15 recite limitations, "the coordination between the transmission of radio

bursts from at least two different base stations comprising at least one radio transmitter----multiplexer is arranged to insert a synchronized radio burst -----synchronized timing". These limitations are not illustrated in the drawings.

Appropriate clarification/ correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 1- 3 and 14 rejected under 35 U.S.C. 102(b) as being anticipated by **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre .

For claim 1- 3 Torre discloses, in reference to figs. 1-2, “ a method of transmitting synchronized channels in at least two radio transmitters----”, refer to col. 2 lines 5-10, and col. 3 lines 5-10; characterized by:

- obtaining synchronized timing, refer to fig. 2, col. 3 lines 23-27;
- forming synchronized radio bursts (SB) the length of which is at most half of the length of a normal radio burst; at least one of which is transmitted, as recited by claim 2,; at least one synchronized radio burst in a burst in a burst having the length of a normal radio burst, as taught by claim 3, refer to col. 3 lines 28-36;

- transmitting synchronized radio bursts in place of normal radio bursts -----is synchronized with the obtained synchronized timing, refer to “burst synchronizing bits” col. 3 lines 18-35.

For claim 14, Torre discloses, “the transmission of synchronized radio bursts only employs a part of the capacity of a normal channel ”, refer to “reduced synchronization field to perform the burst synchronization”, col. 2 lines 12-18.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre, in view of **Alvarez et al** (US Patent No.4,397,019), hereinafter, Alvarez.

For claim 4, Torre discloses all the limitations of subject matter including “padding bits (PAD)”, refer to “guard field G” when no signal is used, refer to col. 3 lines 18-20 and col. 3 lines 45-50, with the exception of the following limitation, “the part of the burst ----synchronized radio burst (SB) consists of predetermined padding bits (PAD)”;

Alvarez discloses more explicitly, “the part of the burst ----synchronized radio burst (SB) consists of predetermined padding bits (PAD)”, refer to col. 7 lines 48-52;

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of adding padding bits to unfilled synchronized burst. The capability can be implemented by constructing the format of frame reference burst, as taught by Alvarez. The suggestion/motivation to do so would have been to enable stations to maintain bit synchronization.

13. Claims 5, 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre, in view of **Bilitza et al** (US Patent No5,390,216), hereinafter, Bilitza.

For claims 5, 6, 8, Torre discloses all the limitations of the subject matter, with the exception of “synchronized radio burst comprises a predetermined bit pattern, as recited by claim 5; “the bit pattern is a training sequence”, as recited by claim 6, and “placing the radio burst in a time slot”, as recited in claim 8 .

Bilitza discloses, “synchronized radio burst comprises a predetermined bit pattern, as recited by claim 5; and “the bit pattern is a training sequence”, as recited by claim 6, refer to col. 7 lines 20-25 and fig. 1.

Bilitza discloses, “placing the radio burst in a time slot”, as recited in claim 8, refer to col. 5 lines 60-62, col. 6 lines 40-42 and col. 9 lines 4-8.;

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of adding bit pattern of training sequence. The capability can be implemented by constructing the format of frame reference burst, as taught by Bilitza. The

suggestion/motivation to do so would have been to enable stations to maintain bit synchronization.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre, in view of **Maloney et al** (US Patent No 6,108,555), hereinafter, Maloney.

For claim 7, Torre discloses all the limitations of the subject matter, with the exception of , “the synchronized radio burst comprises information, ----location coordinates----- and/or the offset—time difference-----”

Maloney discloses, “the synchronized radio burst comprises information, ----location coordinates-----and/or the offset—time difference-----”, refer to col. 12 lines 15-20.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of synchronized burst including information of offset or time difference between the transmission moments of the ideal synchronized radio burst and the actual synchronous radio burst. The capability can be implemented by constructing the format of frame reference burst, as taught by Bilitza. The suggestion/motivation to do so would have been to determine the position of mobile station.

15. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre, in view of **Poon et al** (US Patent No. 5,940,380), hereinafter,Poon.

For claims 9 and 10, Torre discloses all the limitations of the subject matter, with the

exception of , “the synchronized channel is transmitted by means of at least one normal physical channel, as recited by claim 9; “indicating on a control channel the physical channels to be used for the transmission of the synchronized channel”, as recited by claim 10.

Poon discloses, “the synchronized channel is transmitted by means of at least one normal physical channel, as recited by claim 9; “indicating on a control channel the physical channels to be used for the transmission of the synchronized channel”, as recited by claim 10, refer to fig. 4 and col. 5 lines 45-55.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of using control channel, synchronized channel and physical channel. The capability can be implemented by constructing the format of frame reference burst, as taught by Poon. The suggestion/motivation to do so would have been to determine the position of mobile station.

16. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre, in view of **Uddenfeldt** (US Patent No. 5,805,633), hereinafter, Uddenfeldt.

For claim 11, Torre discloses all the limitations of the subject matter, with the exception of , “the physical channel-----synchronized channel-----signaling information----- -”, as recited by claim 11;

Uddenfeldt discloses, “the physical channel-----synchronized channel-----signaling information-----”, as recited by claim 11, refer to col.1 lines 60-67;

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of using control channel, synchronized channel and physical channel. The capability can be implemented by constructing the format of frame reference burst, as taught by Uddenfeldt. The suggestion/motivation to do so would have been to determine the position of mobile station.

17. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre, in view of **Silventoinen et al** (US Patent No. 6,108,553), hereinafter, Silventoinen.

For claim 12, Torre discloses all the limitations of the subject matter, with the exception of, "the method is used in a locating method, such as, the OTD (Observed time difference) method, as recited by claim 12;

Silventoinen discloses, "the method is used in a locating method, such as, the OTD (Observed time difference) method, as recited by claim 12, refer to col.4 lines 52-67;

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of using the OTD (Observed time difference) method. The capability can be implemented by employing the method of using the OTD (Observed time difference) method, as taught by Silventoinen. The suggestion/motivation to do so would have been to determine the position of mobile station.

18. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hita de la Torre et al** (US Patent No. 5,533,028), hereinafter, Torre, in view of **Avis** (US Patent No. 6,332,086), hereinafter, Avis.

For claim 13, Torre discloses all the limitations of the subject matter, with the exception of, “a synchronized radio burst is transmitted when the radio transmitter is in discontinuous transmission”, as recited by claim 13;

Avis discloses, “a synchronized radio burst is transmitted when the radio transmitter is in discontinuous transmission”, as recited by claim 13, refer to col. 6 lines 64-67;

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of “a synchronized radio burst is transmitted when the radio transmitter is in discontinuous transmission”. The capability can be implemented by employing the method of “a synchronized radio burst is transmitted when the radio transmitter is in discontinuous transmission”, as taught by Avis. The suggestion/motivation to do so would have been to send communication only when there is free time slot.

Allowable Subject Matter

19. Claims 15-28 are allowed.

20. The following is an examiner’s statement of reasons for allowance:

The prior art does not teach or fairly suggest the limitations of the following claims:

As recited by claim 15,

“the multiplexer is arranged to insert a synchronized radio burst in the place of a normal radio burst such that the transmission of the synchronized radio burst is synchronized with the obtained synchronized timing”.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Prior Art

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Dupuy (US Patent No. 5,711,003) discloses a method of handover between two cells of a TDMA cellular mobile radio network.

Conclusion

22. Any enquiry concerning this communication should be directed to Inder Mehra whose telephone number is (703) 305-1985. The examiner can be normally reached on Monday through Friday from 8:30AM to 5:00 PM.

If attempt to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Seema Rao , can be reached on (703) 308-5463. Any enquiry of a general nature of relating to the status of this application or processing should be directed to the group receptionist whose telephone number is (703) 305-4700.

23. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to (703) 872-9314.

Hand -delivered responses should be brought to Crystal Park II, 2121 Crystal drive,
Arlington, VA, sixth floor (Receptionist).

Inder Mehra
Inder Mehra

February 6, 2004

DM
DANG TON
PRIMARY EXAMINER